

REMARKS

This paper is presented in response to the Examiner's Office Action mailed August 10, 2004 (the "Office Action"). Claims 58 and 82 are canceled (claims 1-7 and 9-56 were canceled in a previous paper), claims 8, 67, 78, 84 and 85 are amended, and new claim 94 is added. Claims 8, 57, 59-81, and 83-94 are now pending in this application as a result of such cancellations and new claim.

Reconsideration of this application is respectfully requested in view of the amendment herein and the following remarks. For the convenience and reference of the Examiner, the remarks of the Applicant are presented in the order in which the corresponding issues were raised in the Office Action.

In connection with the matters contemplated herein, Applicant respectfully notes at the outset that the following discussion should not be construed to constitute an exhaustive enumeration of the distinctions between the claims of the present application and the references cited by the Examiner. Instead, such distinctions are presented solely by way of example. Consistent with the foregoing, the discussion herein is not intended, and should not be construed, to prejudice or foreclose future consideration, by the Applicant, of additional or alternative distinctions between the claims of the present application and the references cited by the Examiner.

Moreover, Applicant notes that the claim amendments and/or arguments herein have been made merely to clarify the claimed embodiments from elements purported by the Examiner to be taught by the cited references. These claim amendments should not be construed as an acquiescence, on the part of the Applicant, as to the purported teachings or prior art status of the cited references, nor as to the characterization of the cited references advanced by the Examiner.

Accordingly, Applicant reserves the right to challenge the purported teaching and prior art status of the cited references at any appropriate time.

I. Alleged Anticipation of Claims 8, 57-61, 63-73, 75-90 and 92-93

Applicant respectfully notes at the outset that a claim is anticipated under 35 U.S.C. § 102(a), (b), or (e) only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Further, the identical invention must be shown in as complete detail as is contained in the claim. Finally, the elements must be arranged as required by the claim. See Manual of Patent Examining Procedure (“M.P.E.P.”) § 2131.

With attention now to the specific rejections, the Examiner has rejected claims 8, 57-61, 63-73, 75-90 and 92-93 under 35 U.S.C. § 102(b) as anticipated by U.S. 5,264,801 to Anderson (“*Anderson*”). In light of the cancellation herein of claims 58 and 82, Applicant submits that the rejection of those claims has been rendered moot and should accordingly be withdrawn. As to the remaining claims that are the subject of the aforementioned rejection, Applicant respectfully disagrees with the Examiner and submits that, for at least the reasons outlined herein, *Anderson* fails to anticipate such claims.

In the rejection of the aforementioned claims, the Examiner simply lists various elements selected from the claims, and then concludes with a blanket assertion that all of those recited elements are taught at “Figs. 2 and 5 above; Abstract and respective portions of the specification.” Applicant respectfully submits that merely alleging a reference teaches certain elements, without identifying where in the reference such elements are taught, falls well short of establishing that a particular reference is anticipatory. Nonetheless, Applicant believes that the anticipation rejection is not well-founded and should be withdrawn.

a. Independent claim 8

Claim 8 has been amended herein to require, among other things, “an emitter configured to receive a flow of electrical current such that thermionic emission of electrons from the emitter is facilitated” and to further require that the emitter define a “cutout.” Support for these amendments can be found in the application at, for example, Page 11, lines 20-23, and Page 11, lines 17-19.

Although the Examiner has alleged that *Anderson* teaches an emitter with a cutout, the Examiner has simply not identified, with any specificity whatsoever, where such a “cutout” is purportedly disclosed in that reference.

As well, *Anderson* fails to teach or suggest that the “dispenser cathode 18” recited there (see, e.g., col. 2, line 26) (also referred to as a “focusing structure 52” or a “cathode 84”) is “configured to receive a flow of electrical current such that thermionic emission of electrons from the emitter is facilitated,” as claim 8 requires. Rather, *Anderson* provides that “A rotating transformer consisting of primary coil 22 outside the evacuated chamber 12 and secondary coil 23 inside the evacuated chamber couples radio frequency power to the indirect heater 20” (col. 2, lines 25-30). As indicated in Figure 1 of *Anderson*, the “indirect heater 20” is located near the “dispenser cathode 18.” As presently understood by Applicant, it would thus appear that the “indirect heater 20” receives RF power which causes generation of heat by the “indirect heater 20” that is transferred to the nearby “dispenser cathode 18,” presumably then causing the “dispenser cathode 18” to emit electrons.

In view of Applicant’s present understanding of *Anderson*, it is clear that not only are the dispenser cathode 18,” “focusing structure 52” and “cathode 84” not configured to receive a flow of electrical current for facilitation of thermionic emission of electrons but, further, that no such

configuration is necessary or desirable, since it appears to be the function of the “indirect heater 20” to stimulate, in the “dispenser cathode 18,” the thermionic emission of electrons.

For at least the foregoing reasons, Applicant respectfully submits that the Examiner has failed to establish that each and every element as set forth in claim 8 is disclosed in the *Anderson* reference. Applicant accordingly submits that the rejection of claim 8, as well as the rejection of claims 57 and 59-66 depending therefrom, has been overcome and should be withdrawn.

b. Independent claim 67

As amended herein, independent claim 67, similar to claim 8, requires that the emitter be “configured to receive a flow of electrical current such that thermionic emission of electrons from the emitter is facilitated.” As outlined above in connection with the discussion of claim 8, Applicant respectfully submits that *Anderson* fails to teach, at least, the aforementioned limitation of claim 67 and, accordingly, Applicant further submits that the rejection of claim 67, as well as the rejection of claims 68-73 and 75-77 depending therefrom, has been overcome and should be withdrawn.

c. Independent claim 78

As amended herein, independent claim 78, similar to claim 8, requires that the emitter define a “cutout.” As outlined above in connection with the discussion of claim 8, Applicant respectfully submits that *Anderson* fails to teach, at least, the aforementioned limitation of claim 78 and, accordingly, Applicant further submits that the rejection of claim 78, as well as the rejection of claims 79-81 and claim 83 depending therefrom, has been overcome and should be withdrawn.

d. Independent claim 84

Claim 84 has been amended herein to further specify that the target anode is “substantially disposed within the vacuum enclosure such that the target anode and target surface

are spaced apart from the vacuum enclosure.” Support for this amendment can be found, for example, at Figure 1 of the application.

The arrangement recited in amended claim 84 contrasts sharply with the arrangement recited in *Anderson* where “The anode of the X-ray source is part of the exterior cylindrical chamber” (col. 1, lines 51-52) (emphasis added). Not only does *Anderson* fail to teach, at least, the aforementioned limitation of amended claim 84, but it is likewise clear that there is no apparent motive to modify *Anderson* to include such limitation, nor is it evident that such a modification could even be successfully implemented without impairing the functionality of the *Anderson* device. For example, if the “cylindrical anode 42” of *Anderson* were “spaced apart” from the “cylindrical chamber 40” in the manner recited in claim 84, it is not at all clear how the rotation of the “cylindrical anode 42” would be achieved.

For at least the foregoing reasons, Applicant respectfully submits that the Examiner has failed to establish that each and every element as set forth in claim 84 is disclosed in the *Anderson* reference. Applicant accordingly submits that the rejection of claim 84, as well as the rejection of claims 85-90 and 92-93 depending therefrom, has been overcome and should be withdrawn.

II. Alleged Obviousness of Claims 62, 74 and 91

Applicant respectfully notes at the outset that in order to establish a prima facie case of obviousness, it is the burden of the Examiner to demonstrate that three criteria are met: first, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; second, there must be a reasonable expectation of success; and

third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See M.P.E.P. § 2143.

With attention now to the specific rejections, the Examiner has rejected claims 62, 74 and 91 under 35 U.S.C. § 103(a) as being unpatentable over *Anderson* in view of U.S. 6,066,019 to Bewlay ("*Bewlay*"). For at least the reasons outlined herein however, Applicant respectfully disagrees with the Examiner and submits that the rejection should be withdrawn.

a. Claim 62

By virtue of its dependency from claim 8, dependent claim 62 is directed to an integral cathode that requires, among other things, "an emitter configured to receive a flow of electrical current such that thermionic emission of electrons from the emitter is facilitated" as well as that the emitter define a "cutout." However, as noted above in the discussion of claim 8, *Anderson* fails to teach or suggest, at least, such a limitation. Moreover, the Examiner has not established that either of the aforementioned limitations is taught or suggested by *Bewlay*.

Thus, even if the teachings of the cited references are combined, the resulting combination nonetheless fails to teach or suggest all the limitations of claim 62. Applicant thus submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claim 62 and the rejection of claim 62 should accordingly be withdrawn.

b. Claim 74

In view of its dependency from claim 67, dependent claim 74 is directed to an integral cathode that requires, among other things, "an emitter configured to receive a flow of electrical current such that thermionic emission of electrons from the emitter is facilitated" as well as that the emitter define a "cutout." However, as noted above in the discussion of claim 67, *Anderson* fails to teach or suggest, at least, such a limitation. Moreover, while *Bewlay* states that "to release electrons, a cathode filament is heated to incandescence (white heat) by passing an

electron current through it” (col. 1, lines 15-17) (emphasis added), *Bewlay* appears to be concerned with filament type cathodes, and not with the type of cathode indicated in *Anderson*. Thus, it is at best unclear as to whether the filament heating scheme recited in *Bewlay* would be effective or useful when employed in connection with the *Anderson* cathode.

Moreover, as discussed above, it appears that the *Anderson* cathode is heated indirectly by the “indirect heater 20.” Consequently, it is clear that there would be no need, or motivation, to pass a current through the *Anderson* cathode to achieve thermionic emission of electrons, since the heat that would apparently result from such passage of electrical current is already purported by *Anderson* to be provided by the “indirect heater 20.”

Because there is no motivation to modify the *Anderson* reference to include the teaching of *Bewlay*, and because it is unclear that a desirable result would be achieved even if such a modification were undertaken, Applicant submits that claim 74 is unobvious in light of the cited references. Applicant thus submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claim 74 and the rejection of claim 74 should accordingly be withdrawn.

c. Claim 91

By virtue of its dependency from claim 84, dependent claim 91 is directed to an x-ray device including a target anode “substantially disposed within the vacuum enclosure such that the target anode and target surface are spaced apart from the vacuum enclosure.” However, as noted above in the discussion of claim 84, *Anderson* fails to teach or suggest, at least, such a limitation. Moreover, the Examiner has not established that the aforementioned limitation is taught or suggested by *Bewlay*. As further noted in the discussion of claim 84, it is clear that there is no apparent motive to modify *Anderson* to include such limitation, nor is it evident that

such a modification could even be successfully implemented without impairing the functionality of the *Anderson* device.

Thus, even if the teachings of the cited references are combined, the resulting combination nonetheless fails to teach or suggest all the limitations of claim 91. Applicant thus submits that the Examiner has failed to establish a *prima facie* case of obviousness with respect to claim 91 and the rejection of claim 91 should accordingly be withdrawn.

III. New Claim 94

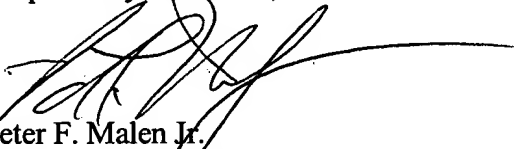
By this amendment, Applicant has added new dependent claim 94. In view of its dependence from claim 84, believed by Applicant to be in allowable condition, claim 94 is likewise believed to be in allowable condition.

CONCLUSION

In view of the remarks and amendment submitted herein, Applicant respectfully submits that each of the pending claims 8, 57, 59-81, and 83-94 is now in condition for allowance. Therefore, reconsideration of the rejections is requested and allowance of those claims is respectfully solicited. In the event that the Examiner finds any remaining impediment to a prompt allowance of this application that could be clarified in a telephonic interview, the Examiner is respectfully requested to initiate the same with the undersigned attorney.

Dated this 9th day of December, 2004.

Respectfully submitted,



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